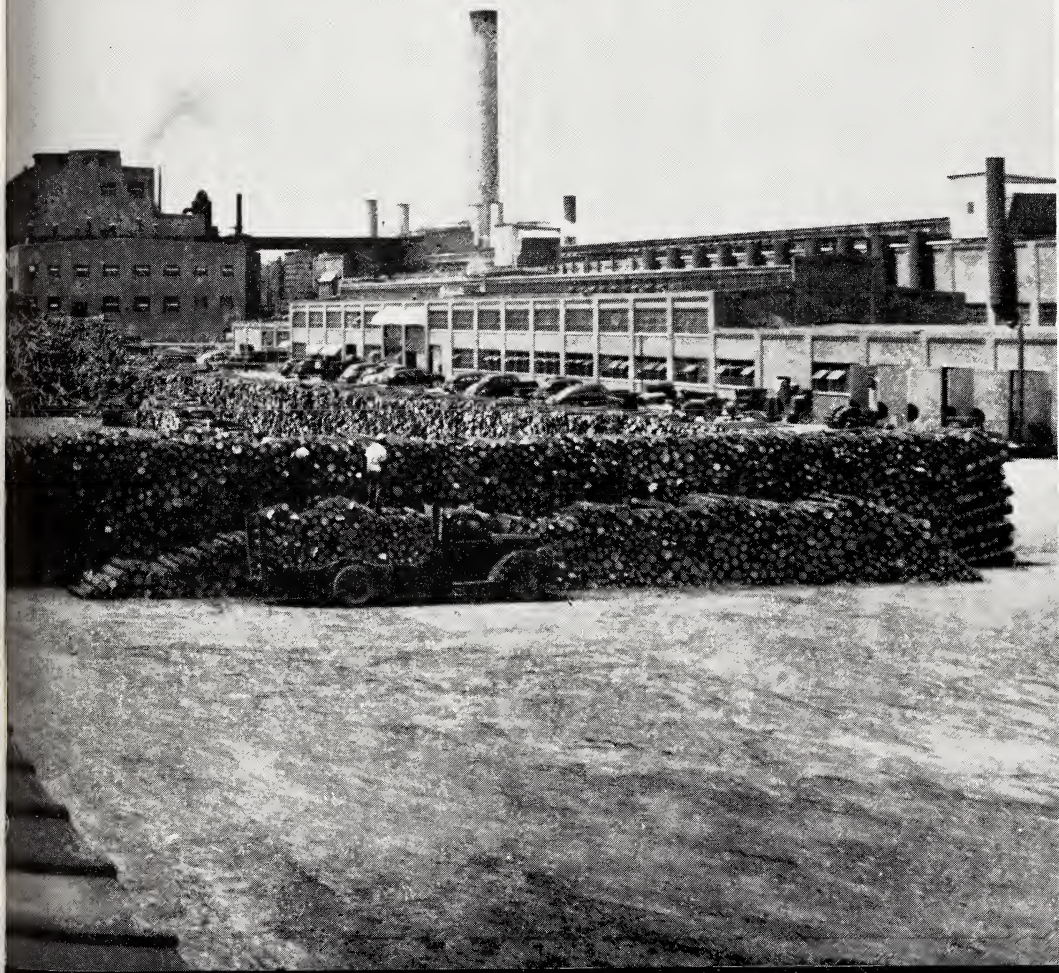
1959

The Louisiana forest industry: its economic importance and growth

Floyd L. Corty

THE LOUISIANA FOREST INDUSTRY

Its Economic Importance and Growth



Bulletin No. 521

Agricultural Experiment Station
Charles W. Upp, Director

March 1959
Louisiana State University
and Agricultural and
Mechanical College

SUMMARY TABLE

		1953	1957	Change
I.	General			
	Wood mfg. establishments, number	1,181	1,142	— 39
	Employment, number of workers	41,246	36,502	— 4,744
	Annual payroll, million dollars	117	131	+ 14
	Value annual output, million dollars	507	735	+ 228
	Severance tax revenue, thousand dollars	583	660	+ 77
II.	Cutting			
	Sawtimber, million board feet	880	721	— 159
	Pulpwood, thousand cords	1,357	1,412	+ 55
III.	Replacement			
	Growth rate in excess of cutting rate, per cent	96	114	+ 18
	Seedlings planted, millions	60	80	+ 20

CONTENTS

ACKNOWLEDGMENTS

The author wishes to acknowledge the use of data provided by the Louisiana State University School of Forestry, the Southern Forest Experiment Station of the United States Forest Service, the Louisiana State Forestry Commission, the Division of Employment Security of the Louisiana State Department of Labor and the Louisiana State Department of Commerce and Industry. Photographs were provided by the Louisiana State Forestry Commission.

THE LOUISIANA FOREST INDUSTRY

Its Economic Importance and Growth

F. L. Corty[1]

Proportion of Louisiana Acreage Devoted to Forests

Slightly more than half (55.8%) of the land in Louisiana is classified as forest land. Less than 1 per cent (0.6%) is considered non-commercial forest.[2]

Forest land is found in every parish of the state but the proportion of land devoted to forest varies considerably among parishes. It ranges from less than 1 per cent in Cameron Parish, bordering the Gulf coast, to slightly more than 90 per cent in Winn Parish, just north of Alexandria. Fifteen of the 64 parishes are more than 75 per cent forested. Thirteen of these form a ham-shaped area near the center of the state bounded by Lake Charles, Mansfield, Ruston and Vidalia. More than half (34) of the parishes have more than 60 per cent of their land area in forest (Figure 1).

More Louisiana land is devoted to forestry than to farming. In fact the area of forest land exceeds crop and pasture land by about five million acres.

Woodlands may be classified into two broad categories—softwoods, consisting of the numerous pine varieties, and hardwoods, which include the oak, hickory, gum, elm, ash and cottonwood types.

Hardwoods dominate about half of the forest area in the state. They are localized primarily in the delta regions and along waterways. A broad belt of bottomland hardwoods extends along the Mississippi River from the northern boundary of the state to New

---

[1]Assistant Professor, Department of Agricultural Economics.

[2]Forest land includes areas of more than one acre, not less than 120 feet in width, and at least 10 per cent stocked with trees which are capable of producing timber or other wood products. A less-than-10 per cent stocking would still be classed as forest land if trees were removed but land remained for tree production. Land is classified as non-commercial when it has been withdrawn from timber production and utilized for parks, monuments or other special uses, and also when it is incapable of yielding wood products or is physically inaccessible so that wood products are not economically available.

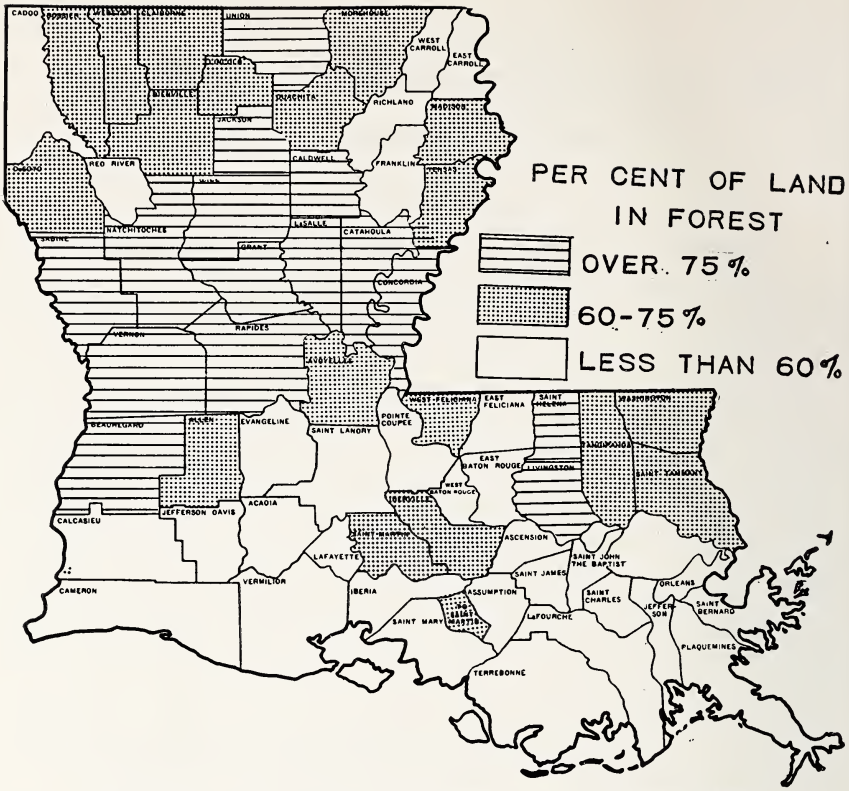


FIGURE 1.—Proportion of parish area in forest, 1953-54.

Orleans, thus separating two softwood regions. One softwood region is a six-parish area in the Florida Parishes district and the other is a 20-parish area in the western and northwestern part of the state (Figure 2).

Forest lands of Louisiana are owned by 111,654 persons, with average holdings of 144 acres per owner.[3] This is more than twice as large as the national average of 66 acres.

About 5 per cent of the forest land is owned by government agencies. The Federal government owns a little more than 3 per cent, and slightly less than 2 per cent is held by state, parish and municipal governments.

---

[3]*Louisiana Forest Facts,* 1958 Edition. The Louisiana Forest Industry Committee, 1033 National Bank of Commerce Building, New Orleans, Louisiana. p 4.

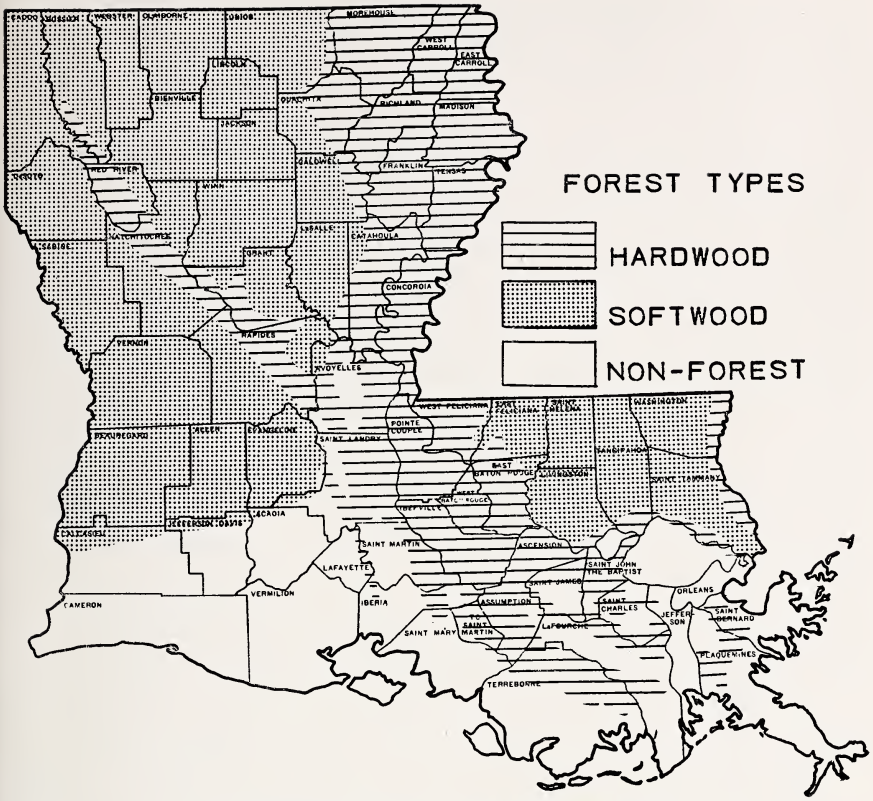


FIGURE 2.—Forest types in Louisiana.

Of the 95 per cent owned privately, only 20 per cent is in farm acreage, 36 per cent is owned by industrial groups, and 39 per cent by other private individuals.

Forest Resources

An official survey of Louisiana forest resources was made by the United States Forest Service in 1953-54.[4] The existing volume of sawtimber was then estimated to be about 45.4 billion board feet. Sawtimber includes softwoods 9 or more inches in diameter and hardwoods 11 or more inches.

Two-fifths of the softwood acreage and half the hardwood acreage was in sawtimber stands which constituted 46 per cent of Louisiana's commercial forest acreage.

---

[4] *Forests of Louisiana, 1953-54.* Forest Survey Release 75, Southern Forest Experiment Station, New Orleans, Louisiana, April 1955.

About half of the commercial forest area was considered well stocked; that is, the woodland contained at least 70 per cent of the number of trees required to fully utilize the available growing space.

At the time of the survey the sawtimber stands included 20.3 million board feet of softwood and 25.1 million board feet of hardwood. A breakdown in terms of diameter classes revealed that 50 per cent of the volume of softwood and hardwood sawtimber consisted of trees 14-18 inches in diameter. One-third of the softwood volume was in trees 10-12 inches in diameter but only one-seventh of the hardwood volume was in this size group. On the other hand, a little over a third of the volume in the 20-inches-or-more diameter class was hardwood and about one-sixth softwood (Table 1).

TABLE 1.—Volume Composition of Sawtimber Stands in Louisiana, 1953-54

Diameter Breast High	Softwoods	Hardwoods
(Inches)	(Per Cent of Volume)	
10 - 12	33	14
14 - 18	51	50
20 and up	16	36
Total	100	100

The 1953-54 inventory of forest growing stock, which includes all trees 5 inches or more in diameter, showed a total volume of 12.1 billion cubic feet. Net annual growth was computed to be about 716 million cubic feet. The timber cut in 1953 was 366 million cubic feet.[5] Thus, the rate of growth was exceeding the rate of cut by 96 per cent.

Rate of Severance for Sawtimber and Pulpwood

In the past five years (1953-57) sawtimber cut in the state has averaged 851 million board feet per year. The greatest cut occurred in 1956 when about 956 million board feet were harvested. In 1957 the cut dropped to 721 million, the lowest of the five-year period (Figure 3).

A tree 16 inches in diameter and 75 feet tall will make approximately 250 board feet of lumber. On this basis, it is estimated that in 1957 about 2,886,000 trees were cut for sawtimber, an average of 7,907 per day, or 330 trees every hour.

[5] *Ibid.*, pp. 12-13.

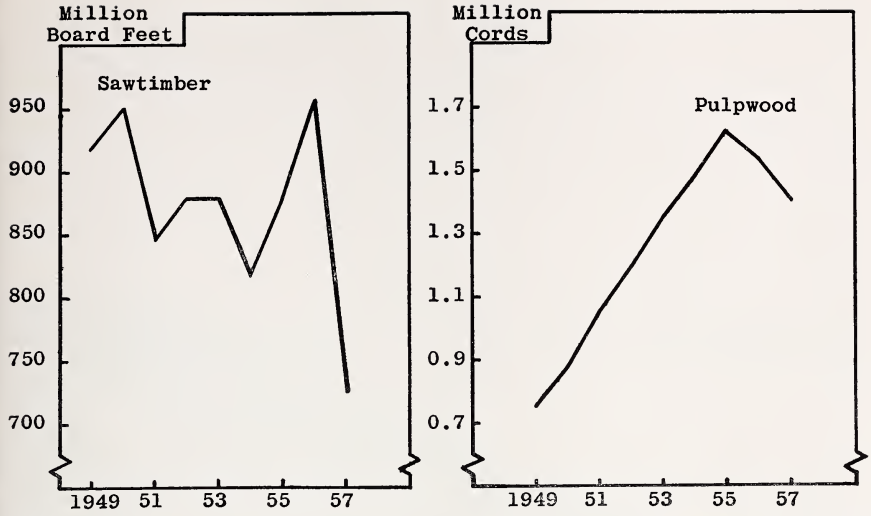


FIGURE 3.—Removal of sawtimber and pulpwood from Louisiana forests, 1949-57.

Lumber production in Louisiana has continued to be about 2 or 3 per cent of total production in the United States and pulpwood production about 4 to 5 per cent. Although lumber production in the 1950's dropped below that of the 1940's, annual pulpwood production increased from less than a million cords in the previous decade to about 1.5 million during the current 10-year period.

The peak of pulpwood production in Louisiana was reached in 1955. Production decreased in 1956 and 1957. The average production for the five-year period 1953-57 was almost 1.5 million cords. When board feet of timber and cords of pulpwood are converted to cubic feet it appears that the average five-year volume removed for sawtimber exceeded that removed for pulpwood by almost 20 million cubic feet.[6]

It is estimated that eight trees, 10 inches in diameter and 40 feet tall, are required to make one cord of pulpwood. Thus, in 1957, about 11,299,328 trees were cut for pulp, an average of 30,957 per day, or about 1,290 trees every hour.

The total harvest of sawtimber and pulpwood was calculated to be about 217 million cubic feet in 1957, compared to 237 million cubic feet in 1953. This drop of 20 million cubic feet is at-

[6]Conversion factors used here were:
One cord of pulpwood = 75 cubic feet of solid wood.
6.5 board feet of sawtimber = 1 cubic foot of solid wood.

Stacks of lumber for the building trades.

tributed to the reduced cutting of sawtimber, which more than offset the increase in pulp cutting.

Rate of Replacement

The survey of Louisiana forests conducted by the United States Forest Service indicated that timber, both pine and hardwood, is growing about twice as fast as it is being cut. Large sawtimber trees are fewer in number but the total sawtimber supply, as well as the total growing stock, is greater now than it was 20 years ago. In the 1930's the rate of cut exceeded the rate of growth, and major concern was expressed over the gradual depletion of this natural resource. By mid-1940, however, the rate of cut dropped below the rate of replacement, and Louisiana's timber supply now promises to build up very rapidly. Favorable growing

conditions have helped Louisiana become one of the leading southern states in volume of timber per forest acre.

Annual net growth of growing stock (trees over five inches in diameter) averages 45 cubic feet per acre (46 cubic feet for softwood types and 43 cubic feet for the hardwoods). In sawtimber of all stand sizes, the annual net growth averages 175 board feet, or 27 cubic feet, per acre.[7]

Several factors have helped to reverse the trend in which the rate of cutting exceeded the rate of growth or replacement. Since mid-1940 the annual cut of sawtimber has been gradually decreasing; the slower-growing hardwoods are being replaced by faster-growing softwoods; more and more farm acreage is being converted to woodland; and better fire protection has cut down losses.

This decade has also given rise to a tremendous interest in reforestation and improved forest management, which in large part can be attributed to the Soil Bank Conservation Reserve Program. In this program the landowner who meets certain requirements receives an initial payment for putting land in trees and then receives annual rental payments for the duration of a 10-year contract. The older Agricultural Conservation Program also continues to encourage reforestation through somewhat smaller payments.

Promotional campaigns on the part of various forestry associations and industrial firms have done wonders to instill interest in conservation and reforestation—influencing not only the individual landowners but also civic groups and legislative bodies.

Tree planting in Louisiana is taking place at an astounding rate. Propagation by direct seeding is not practiced extensively, although in 1957-58 an industrial concern seeded about 1,200 acres by airplane and in 1958-59 plans to seed an additional 18,000 acres. Planting of seedlings is by far the more popular technique.

Seedlings are supplied by seven forest tree nurseries in Louisiana. Three are state owned, one is a Federal nursery and three are owned by wood-using industries. In 1953, about 60 million seedlings were produced for reforestation purposes. By the spring of 1958 seedling production had almost doubled. It is estimated that more than 170 million will be available for the 1958-59 planting season (Figure 4). The state nurseries alone plan to supply 125 million. More than a third of these will be used in conjunction with the Conservation Reserve Program of the Soil Bank.

[7] *Op. Cit., Forests of Louisiana,* p. 12.

One of the three state nurseries which helped to produce more than 100 million seedlings for the 1958-59 planting season, Oberlin, La.

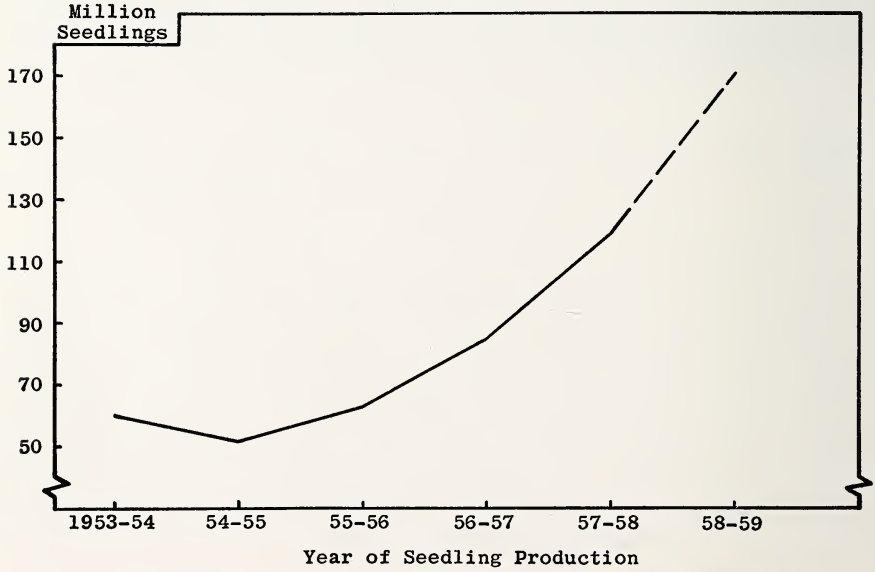


FIGURE 4.—Seedling production in Louisiana, 1953-58.

Not all of the seedlings produced in Louisiana are planted in the state. Only about one-fifth of the Federal nursery production is used in Louisiana. The other four-fifths is used in several southern states extending from Texas to Florida. One of the industrial nurseries also indicated that 500,000 of its 5,500,000 production for 1959 will be used outside the state. Information received from the nurseries indicates that about 145 million pine seedlings will be planted in Louisiana in the 1958-59 season. Since seedlings are usually planted at the rate of about 1,000 trees per acre, it is reasonable to assume that at least 145,000 acres are scheduled for tree planting.

Another program which reflects the growing interest in forest lands is the Tree Farm Program. It is sponsored nationally by the American Forest Products Industries, Inc. and administered in Louisiana by the Louisiana Forestry Association. This organization gives special recognition to a forest landowner who demonstrates his intent or ability to manage his timber wisely and to protect it from fire and other destructive agencies.

A tree farm is a privately-owned forest area of any size that is being used by the owner for the continuous production of commercial forest products and for related uses, including conservation of water, propagation of wildlife, and recreation. A qualified tree farmer receives a certificate and a neat, diamond-shaped road sign signifying membership in the American Tree Farm System.

The Tree Farm Program was introduced in Louisiana in October 1951. By 1955 there were 154 tree farms embracing 1,807,511 acres of woodland. By September 1, 1958, there were 574 Tree Farm members, who owned 3,121,389 acres, almost one-fifth of Louisiana's forest land acreage.

Employment in Wood Manufacturing Industries

Wood using industries in Louisiana provide annual employment for 40,000 to 45,000 people, making up about one-fourth of the manufacturing employment in the state.[8] Annual wages for this group totals more than $130 million or one-fifth of Louisiana's

[8]Based on data provided by the Division of Employment Security, Louisiana State Department of Labor. The number of employees is reported quarterly by establishments having four or more workers covered by the Louisiana Employment Security Law. Approximately 10 per cent of the workers in wood manufacturing industries do not come under the Employment Security Law About 152,000 persons were engaged in manufacturing industries in 1957.

manufacturing payroll.[9] Products resulting directly from the wood industries in 1957 had an estimated market value of $730 million, or about one-sixth of the value of the state's entire manufacturing output.[10]

The importance of the forest industry looms even larger when it is recognized that the above employment figures apply only to the 1,100 manufacturing establishments employing four or more persons. Smaller operations of less than four employees are not included, nor are those engaged in production of trees or management of woodlands. There are approximately 20 firms employing about 200 persons in production of forest trees. An additional 100 professional foresters are employed by public agencies to carry on education, extension and research. It is also necessary to consider the 112,000 owners of forest land, many of them farmers, who rely upon timber stands as an additional source of income.

Utility poles from Louisiana forests, Urania, La.

[9]Based on *Fourth Quarter Report,* Division of Employment Security, Louisiana State Department of Labor, 1957.

[10]*Look at Louisiana Industry,* Louisiana State Department of Commerce and Industry, 1957 data.

Forest industries may be divided into four categories according to type of product and activity. They are: (1) lumber and wood products, (2) paper and allied products, (3) furniture and fixtures, and (4) gum and wood chemicals.

Lumber and wood products industries perform cutting, logging and milling operations resulting in products such as lumber, plywood, shingles, pallets, poles, crossties, boxes and other basic wood materials. About 55 per cent of the workers employed in manufacturing forest products are included in this category (Table 2).

TABLE 2.—Number of Establishments, Employment and Wages in Louisiana Forest Industries, 1957

Industry Group	Number of Establishments	Number of Employees	Wages
Lumber and Wood Products	1,061	20,191	$ 53,244,505
Paper and Allied Products*	46	14,446	70,773,407
Furniture and Fixtures†	27	958	2,951,896
Gum and Wood Chemicals	9	907	3,894,084
Total	1,143	36,502	$130,863,892

*Corrected to exclude non-woodpulp paper making establishments.
†Furniture establishments specializing in fabrics, plastics and metals are omitted.

Paper and allied products industries manufacture woodpulp, convert pulp into many kinds of paper or paperboard and make paper bags, boxes, cards, envelopes and coated paper. Daily pulp producing capacity of Louisiana mills is 5,055 tons.[11] About 40 per cent of the forest products manufacturing employees are engaged in this phase of the industry.

Furniture and fixtures industries include those firms engaged primarily in the manufacture of wooden furniture and wooden cases and cabinets. Only 2.6 per cent of the forest products workers are employed in this phase of the industry.

Gum and wood chemical plants employ about the same number of men as the furniture and fixtures group. The work in this category consists of processing resinous stumps to produce distilla-

[11]Hayes, Ralph W., *Pulpwood Production and Use in Louisiana.* La. Agr. Exp. Sta. Bulletin No. 508, June 1956, p. 6.

A Louisiana paper mill. Louisiana ranks fourth in pulp production capacity, exceeded only by Washington, Georgia and Florida.

tion products such as wood turpentine, pine oils, pitch, tar, creosote and wood alcohol.

Recent Employment Trends in Forest Industries[12]

Employment in forest industries reached a peak of 53,000 in 1947-48, primarily as a result of an expanded building program following World War II. In 1951, during the Korean conflict, employment stood at about 47,000, but in the past five years there has been a continuous decline so that by mid-1958 employment had dropped to about 34,000.

The most conspicuous reduction occurred in the lumber and wood products group. Employment dropped from about 24,600 in 1953 to about 18,000 in the summer of 1958 (Figure 5).

In paper and allied products, employment was fairly stable throughout the period; that is, between 14,000 and 15,000.

The number employed in the manufacture of wooden furniture and fixtures dropped from about 1,150 in 1953 to about 900

[12]Based on employment covered by Louisiana Employment Security Law, which does not include establishments with less than four employees.

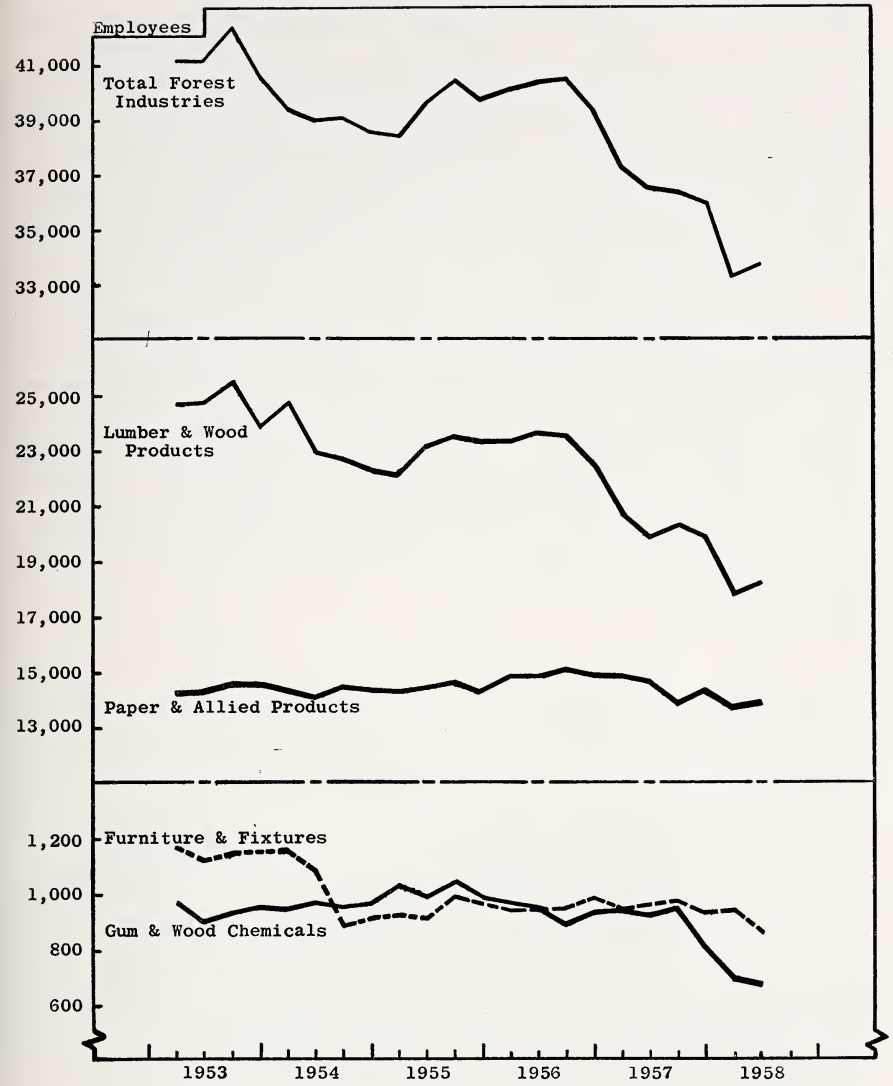


FIGURE 5.—Employment trends in Louisiana forest industries, 1953-1958.

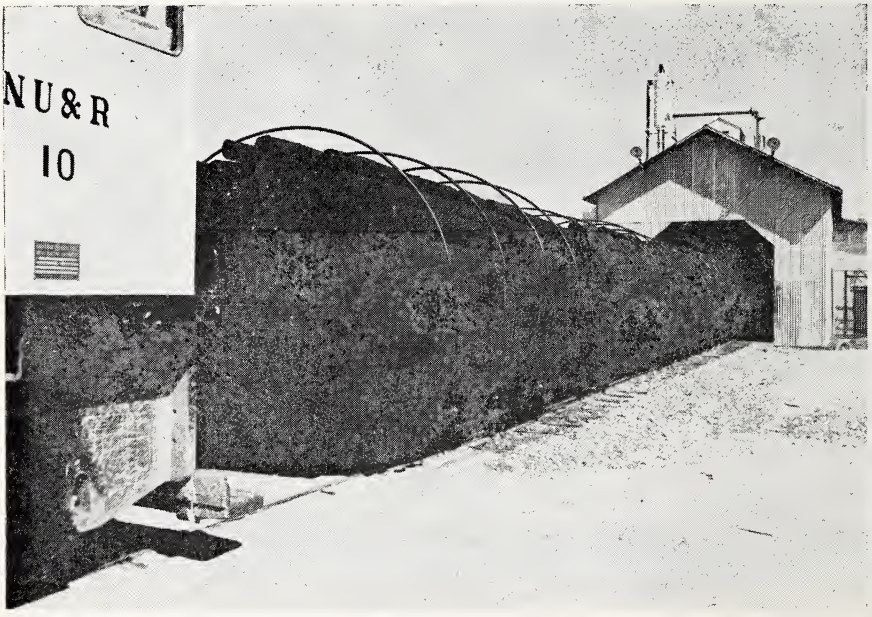
in 1958. Workers in gum and wood chemicals numbered almost 1,000 from 1953 to 1957, but from 1957 to mid-1958 the number dropped to 700.

Seasonal fluctuation in employment among the four industry groups is most evident in the lumber and wood products group. An appreciable drop in employment generally occurs in the spring and

winter when heavy rains and floods usually hamper cutting and logging operations.

A general decrease in employment is evident for the industry as a whole. This drop may be attributed primarily to the decline in residential construction since 1955. From 1955 to 1956 the construction of new dwelling units dropped 21 per cent in Louisiana and 18 per cent in the United States. The following year housing starts were down another 2 per cent in Louisiana and 10 per cent for the nation as a whole.

Three other factors also contribute to the drop in employment during this period. They are: (1) increased mechanization, particularly in logging and sawmill operations, (2) expanded use of wood substitutes such as brick, concrete, asbestos, metals and plastics, and (3) increased durability of wood products through wood preserving treatments, particularly of utility poles, crossties, piling and framing timber. The lifespan of crossties, which formerly was 5 to 10 years, is now increased to 35 or 40 years by use of the wood preserving treatment.



Treating fence posts will increase their lifespan four to six times. (Urania, La.)

The Value of Forest Products

The stumpage value of sawtimber cut in 1957 was $16 million and the value of pulpwood $4.9 million, or a total stumpage value of almost $21 million accruing to owners of forest land.[13]

In 1957 the value of manufactured forest products was estimated to be about $735 million, or 17 per cent of the total value of the manufacturing output of Louisiana.[14] Furthermore, the total value of the finished products was 35 times the original stumpage value.

Severance taxes on lumber and pulpwood contributed a little more than $660,000 to state revenues while sales taxes on finished products contributed an estimated $5 million.

[13]Computation based on severance data provided by Louisiana Department of Revenue and the Louisiana State Forestry Commission.

[14]*Look at Louisiana Industry,* State Department of Commerce and Industry, 1958.